DEPARTMENT OF THE AIR FORCE
USAF OCCUPATIONAL AND ENVIRONMENTAL HEALTH LABORATORY (AFSC)
BROOKS AIR FORCE BASE, TEXAS 78235-5501

TX3 571524161

REPLY TO ATTN OF: TSS (Capt Johnson/1-800-821-4528)

19 JUN 1987

SUBJECT: Reply to Technical Comments in USEPA Region VI Letter to HQ ATC/SGPB, 9 Sep 86, Phase II, Stage 1 2nd Draft IRP Report for Sheppard AFB TX

TO: HQ ATC/SGPB

1. I am providing my response to the USEPA Region VI comments on the Sheppard AFB, Phase II, Stage 1 draft report. EPA comments are paraphrased and then followed by my reply. Also, the comments and replies are keyed by number to the numbers used by the EPA in their letter.

USEPA Region VI comments and the USAFOEHL technical program manager's replies follow:

1. "... existence of a swampy area along Bear Creek and the drilling log for boring B-3 indicates the presence of wet sand from 0 - 10 feet. These factors do not support the assumption that the waste pits are not hydraulically connected to Bear Creek. Groundwater analysis in this area should be undertaken."

The on-site geologist was contacted and affirmed his previous conclusion that there is little or no hydraulic communication between Bear Creek and the soils under the waste pits. The wet sand in boring B-3 is probably a relic of flooding or ponding as the area is on a flood plain of Bear Creek characterized by flat lying topography (page 4-22). Additionally, boreholes C-1 and C-3 (Fig. 4-4) do not show the sand present, so it should not be assumed that borehole B-3 is representative of the stratigraphy of the area or that the permeable sand layer is continuous.

2. "Figure 2-11 notes the presence of a landfill adjacent to the waste pits that was not indicated in the Phase I report. Page 22 indicates this landfill is a possible source of contamination found in Bear Creek at SW-1."

There is no "landfill" as shown. It is a construction rubble dumping area and will be relabeled "hardfill". The statement on pg 4-22 regarding its contribution to Bear Creek contamination should be interpreted in this context. The paragraph of which the sentence is a part discusses urban runoff. An unconsolidated area where urban rubble was placed would be expected to contribute to "urban runoff" to the nearby drainage. As there is no evidence of hazardous waste in the hardfill, further investigation of the hardfill is not warranted.

3. "The report is unclear regarding the extent of removal actions undertaken during the mid-1970's, as described on page 4-7. Additional clarification is desirable."

Unfortunately no further information is available on the extent of removal actions. Also, during the Stage 1 investigation no topographic evidence of the pits was evident at the site.

4a. "...We agree that these analytical values are not reflective of actual soil conditions (page 4-18)."

This particular statement has been taken out of the context in which it was used. The statement is part of the discussion of the analytical methods used and refers to the fact that second column confirmation was not done to positively confirm the identity of compounds detected.

b. "...Additional sampling in and south of the waste pits for EPA priority pollutants, including metals, should be undertaken."

Concur that the waste pits have not been completely characterized. Additional sampling will be recommended.

5. "We agree with the statement on page 5-1 that the waste pits have the potential to impact Bear Creek and its tributaries...."

Again, the sentence referenced is taken out of context and used in a sense not intended. The sentence is from the introduction to the section on "Alternative Measures" and is part of a discussion on potential receptors. It was in no way meant to be a conclusion as is implied by the EPA comment. In actuality the report concludes that the potential based on the study conducted for the waste pits to impact Bear Creek is very low. However, as stated in response to comment 4, we do agree the waste pit contamination has not been completely characterized. Therefore further sampling will be recommended.

6. "...We believe that analysis for radioactivity should be included in any future...efforts...."

The recommendation will be considered for future work. However, it will not be included in this report as it was not in the scope of this effort.

7. "...future investigative efforts should include analysis for an expanded list of EPA priority pollutants."

This recommendation will be considered in the planning of the next effort.

8. "No results were provided in the report from surface sampling point SW-3."

It is not a sampling point; it is a water level measuring point. This is explained in the last paragraph of page 3-24.

9. "Future reports should indicate the locations of the swampy areas...."

Agree.

10. "...the use of fabric filters is discouraged...."

Agree

11. "...Given the proximity of these streams to several waste disposal areas, the current number of wells is insufficient."

Agree with the spirit of the comment. However, the extensive deposits of tight clay in the area may make further wells impractical.

12. "If the surface water in the evaporation pond is connected with the groundwater as depicted in figure 4-19, concentric groundwater contours should emanate from the pond. If figure 4-20 is correct, it appears none of the wells were placed in locations that will detect leakage from the evaporation ponds."

In regard to the groundwater contours, figure 4-20 does indicate the influence of the evaporation pond on the contours. Also, the hydrogeological cross-section in figure 4-19 indicates the presence of clays and silts around the evaporation pond. These low permeability materials would minimize the influence of the pond in the groundwater contours. The discussion on groundwater quality also indicates the monitoring wells were of very low productivity. It is therefore unlikely and not supported by the field data that the evaporation pond would have a major influence on regional groundwater flow and the associated groundwater level contours. Concerning location of sample wells, we feel that MW-10 is close enough to the evaporation pond to detect contaminants. Of course, we did not know the exact direction of groundwater flow when we located the wells (this was one of the reasons for installing them), so well locations are not optional based on what we now know. However, the report recommends installation of additional monitoring wells, so additional downgradient monitoring is anticipated.

13. "Coring of the former pit described in figure 4-20 is recommended...."

Concur. The recommendation will be incorporated.

14. "Efforts should be undertaken to locate the source of contamination in the upgradient well MW-8."

Concur. Additional upgradient wells are recommended for this purpose.

15. "We agree that consideration should be given to lining the evaporation pond...."

Noted.

16. "...This indicates the need for analyses of an expanded list of EPA priority pollutants in future sampling efforts."

Concur. According to our chemist, petroleum hydrocarbons may cause interference when only gas chromatography techniques of analysis are used. Therefore, gas chromatography/mass spectrometry analysis will be recommended.

17. "Additional soil sampling in the area of MW-12 is necessary to define the area extent of contamination."

Concur. It is specified on the recommendations section.

18. "If there is even a remote possibility that the source of the organic contamination...is the base potable water...efforts to characterize the base potable water supply are warranted."

The comment referenced was not meant to suggest base potable water is contaminated. One of the compounds found was chloroform, a trihalomethane formed by the reaction of free chlorine with certain organic compounds in water. The area under discussion is heavily watered with chlorinated water from the base potable water supply. It is therefore possible for the chlorine and natural organic chemicals in the soil or ground water to form chloroform. The base water supply is regularly monitored as required by applicable laws and regulations.

19. "Analysis of stream sediments in the base streams for priority pollutants should be taken in conjunction with additional surface water analysis."

Concur. Future work should incorporate sediment analysis with surface water sampling.

20. "...natural conditions are used to explain elevated TDS levels...this explanation appears tenuous at best. Inorganic analysis of major anions and cations...would serve to answer questions concerning the validity of such explanations."

Agree that analysis for major anions and cations from upgradient and downgradient wells should be included in future work. However, due to the documented brackish nature of ground and surface water in this area, we feel TDS variability is most likely due to natural conditions and is of itself not a reliable indication of pollution.

21. "Analysis of drill cuttings for EP Toxicity and Ignitability is insufficient for determining hazard potential...regarding the final disposition of waste materials...."

Your suggestion has been noted for future reference. However, it should also be noted that the EP Toxicity test and Ignitability tests are the only tests the USEPA has approved to determine how to dispose of waste such as soils. Also, we monitor cuttings with an organic vapor analyzer and for discoloration and odor during drilling. Additionally, except for a limited number of corings in waste areas, most of our drilling is done outside of waste areas, so the potential for generation of contaminated waste is low.

22. "Figure 2-1 shows a landfill adjacent to the waste pits...."

This is actually a "hardfill" area. See the response to comment 2.

"The presence of organic contaminants and elevated TDS levels in...MW-8 suggests an unknown source of contamination."

A possible contaminant source, the open storage area on Birdwell Road, is suggested on page 4-52. Also, installation of upgradient monitoring wells to identify the contaminate source is recommended on page 6-7.

"...The presence of these unexpected potential sources of contamination causes concern about the 19 sites originally identified during Phase I, but which were not selected for further study. A brief review of the rationale for the deletion of those sites might be beneficial when planning for the Phase II, Stage 2 efforts."

Concur with this suggestion. Also, comments from regulatory agencies on future efforts will be solicited.

2. The thorough review of the report by Region VI is appreciated and provided some valuable input. We look forward to working with Region VI on future efforts.

Rutherford C. Wooten

RUTHERFORD C. WOOTEN, JR., Colonel, USAF, BSC
Chief, Contract Services Branch